ABSTRACT OF THE DISCLOSURE

The present invention provides recombinant expression constructs comprising nucleic acid encoding mammalian melanocortin receptors, in particular MC-4 melanocortin receptor, and mammalian cells into which said recombinant expression constructs have been introduced that express functional mammalian MC-4 melanocortin receptors. The invention particularly provides such genetically engineered cells expressing the human MC4-R melanocortin receptor for screening compounds for receptor agonist and antagonist activity. The invention also provides screening methods using genetically engineered cells expressing the human MC-4 melanocortin receptor to specifically detect and identify agonists and antagonists for this melanocortin receptor. Such screening methods are provided identifying compounds with MC-4 melanocortin receptor antagonist activity having the capacity to influence or modify metabolism and feeding behavior, particularly pathological feeding behavior such as illness-induced cachexia.